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EXAMINER

CRAIG, DWIN M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/692,807	Applicant(s) KAMIYAMA, NAOYA	
	Examiner DWIN M. CRAIG	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-8,10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5-8, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1, 5-8, 10 and 11 have been presented for reconsideration based on Applicants' amended claim language and arguments.

Response to Arguments

2. Applicants' arguments presented in the January 21st 2009 response has been fully considered; the Examiner's response is as follows:

2.1 As regards the Applicants' response to the 35 U.S.C. § 103(a) rejections of claims 1, 5, 6, 7 and 11 as being unpatentable over Nichols in view of Moran, Applicants' argued on page 7 that Nichols does not disclose or teach;

“a storage section; an event data storage section that is configured to store into the storage section as event data, a time when a setting operation is carried out; a value of the data at the time; and information about the data, only when the setting operation of the data through the output data setting section is detected by a microcomputer; and an event playback section,”

And further that Nichols fails to teach or suggest;

“an event data storage section that is configured to store into the storage section as event data, a time when a setting operation is carried out; a value of the data at the time; and information about the data, only when the setting operation of the data through the output data setting section is detected by a microcomputer,”

The Examiner respectfully traverses Applicants' arguments and further observes that Applicants' are arguing *functional* limitations as disclosed in independent claims 1, 5, 6 and 8, for example Applicants' are arguing that in order for *Nichols* or *Moran* to viable prior art teachings they must disclose, suggest or teach that, the storage section will record data when *a*

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time when a setting operation is carried out; a value of the data at the time; and information about the data, only when the setting operation of the data through the output data setting section is detected by a microcomputer; and the event storage section will record data when a time when a setting operation is carried out; a value of the data at the time; and information about the data, only when the setting operation of the data through the output data setting section is detected by a microcomputer. The Examiner respectfully traverses Applicants' argument. Apparatus claims must be Structurally distinguishable from the prior art. More specifically, "While features of an apparatus may be recited either structurally or functionally claims directed towards an apparatus must be distinguishable from the prior art in terms of structure rather than function" see MPEP section 2114[R-1] Apparatus and Article Claims – Functional Language. Therefore neither *Nichols* nor *Moran* are required to teach, *a time when a setting operation is carried out; a value of the data at the time; and information about the data, only when the setting operation of the data through the output data setting section is detected by a microcomputer* because these are *functional* limitations and not a structural limitation. Further, any teaching of a *storage system* connected to the data collection systems disclosed in *Nichols* need only teach storage. The Examiner can find not distinct different between an *a storage section* and an *event data storage section* and therefore any teaching of a *storage section* meets the call of Applicants' claimed *structure*.

On pages 8 & 9 of the January 21st 2009 response Applicants' further argued;

"Further, with respect to *Moran*, the Office Action asserts that *Moran's* session storage device 103 (Fig. 1; col. 3, lines 1-50) corresponds to the claimed event data storage system.

However, *Moran* is directed to the field of multimedia capture, replay and editing of sessions

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(col. 1, lines 28-29). Moran's invention comprises a user interface for controlling playback of temporal data representing a collaborative activity, such as a meeting. The temporal data is stored by one or more capture devices, such as an audio recorder or electronic whiteboard. The temporal data is comprised of timestreams and events, wherein the timestreams are, for example, audio and video recordings, or a stored history of the actions on an electronic whiteboard. In Moran, the events are occurrences within a timestream, and the events are used to create indices which provide direct access to a point or span in time during the collaborative activity (col. 3, lines 3-5).

In the presently claimed invention, the data is defined as data which is continuously output to a control target during execution of a simulation. Therefore, the information to be stored by Moran's capture device during a meeting, such as a conversation during a meeting or writing to the electronic whiteboard, differs from the claimed data because the data stored in Moran is discrete data, and not continuous data, as in the claimed invention. Additionally, Moran is silent as to an interrelationship between the simulation apparatus and the control target. A conversation during a meeting or writing on the electronic whiteboard is not data to be output to a control target. The presently claimed invention provides the event data storage section as a means for solving the problems that occur when all continuous data are stored during stimulation. To the contrary, Moran merely discloses storing and editing discrete, or discontinuous, data.”

The Examiner notes that there are two portions of Applicants' arguments, the first portion argues that because *Moran* fails to teach continuously streaming data flowing to a data capture event storage section and that the storage of the data in *Moran* is not *continuous* storage and

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further that the teachings of *Moran* fail to meet the limitations in the newly amended claims. The Examiner respectfully traverses Applicants' arguments regarding the suitability of *Moran* as a teaching because *Moran* is from the field of multimedia. Just because *Moran* is from the field of multimedia capture, playback and display does not disqualify *Moran* as a suitable teaching to be combined with *Nichols*. The Examiner notes that *Nichols* does not expressly disclose the teachings of a playback and recoding mechanism for analysis of the recorded simulation data. The use of known in the art methods of recording *control target data* from an instrumented vehicle system as disclosed in *Nichols* would be obvious to an artisan of ordinary skill because, as suggested by *Nichols* an artisan of ordinary skill would desire the ability to review the performance of the system undergoing the simulated fault, in order to analyze if a design to overcome the problems caused by a system failure does in fact perform properly. Further, *Nichols* teaches an apparatus that produces a stream of *continuous* data and *Moran* teaches an apparatus that records *continuous* data, therefore it would have been obvious to an artisan of ordinary skill to record the data produced by the apparatus of *Nichols* using the recording a playback apparatus of *Moran*. The reason for doing so would have been to be able to analyze the response of the system to a fault condition in order to determine a repair in order to return the system under simulation back to full functionality.

The Examiner has found Applicants' arguments to be unpersuasive and will therefore maintain the previously applied prior art rejections.

Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 5, 6, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,535,620 to Nichols in view of U.S. Patent 5,717,869 to Moran et al.

As regards independent claims 1, 5, 6, and 11 and using claim 1 as an example, *Nichols* teaches, a simulation apparatus comprising (Figures 1 & 2 and the descriptive text): an output data setting section that is configured to set data which is continuously output to a control target (Col. 2 lines 32-50 and Col. 2 lines 57-67 "...user defined inputs to the engine management

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system jointly control the engine” and Col. 4 lines 45-67 and Col. 5 lines 1-10 and Col. 5 lines 18-38 “This flag is generated based on user supplied input as to the cycle pattern for the test...” data is being set based on the user input and this is output data because the data being set creates a simulated *exhaust* or output condition, see Col. 5 line 6 “...simulated exhaust gas signals...” as regards the limitation of *continuous* data see Figure 2 which teaches a *continuous* flow of data, further and in regards to the limitation of having *continuous* data, *Nichols* fails to teach any *structural* impediment that would prevent the recording of *continuous data* to a target in a simulation and because the claimed limitation that the data is *continuously* output is a *functional* limitation and not a *structural* limitation there is no requirement for the references either alone or in combination to teach or suggest this limitation),

which is output to a control target during execution of simulation (Col. 5 lines 25-27 “...the engine control module or engine management system controls the injectors...” see also Col. 6 lines 9-37); a data output section for supplying the control target with output data created on the basis of the data set through the output data setting section (Col. 6 lines 23-65 the ignition control signals based on the simulated input are controlling the engine and the simulated exhaust gases are an output that is the basis for the result of the simulation).

However *Nichols* does not expressly disclose, a storage section; an event data storage section and an event playback section.

Moran et al. teaches, a storage section see, an event data storage section, which further includes a method of setting event data, see Figure 1 item 103 and as regards an event storage including a time stamp, which is being interpreted to mean that there is “*a value of the data at the time*”, as expressly claimed, see Col. 3 lines 1-50, more specifically, “...Events are used to

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create indices which provide direct access to a point or span in time which provide direct access to a point in time during collaborative activity...”, the collaborative activity is the *data* at the specific *time*, i.e. at the time stamp, see also Col. 6 lines 35-60 and as regards control or automatic playback see the description of playback controllers in Col. 6 and further see Col. 14 lines 27-31. In Applicants’ instant case and as relates to transferring data to the *target device* in would have been obvious to an artisan of ordinary skill to provide a method of replaying specific behavior of the target device because of the ability to go directly to a portion of the recording that is of interest, see also, Figure 1 item 107 "Playback Controllers" as well as Figure 5 and item 101 in Figure 1.

Comments

Applicants’ claims are directed towards *an apparatus* therefore the *functionality* or *configuration* of the *apparatus* are not being given patentable weight. Only the *structure* of the claimed *apparatus* is being given patentable weight.

Apparatus claims must be Structurally distinguishable from the prior art. More specifically, “While features of an apparatus may be recited either structurally or functionally claims directed towards an apparatus must be distinguishable from the prior art in terms of structure rather than function” see MPEP section 2114[R-1] Apparatus and Article Claims – Functional Language.

Nichols and *Moran et al.* are analogous art because they both come from the same problem solving area of simulation systems.

At the time of the invention, it would have been obvious to a person of ordinary skill to used the playback apparatus of *Moran et al.* with the data setting apparatus of *Nichols*.

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The suggestion for doing so is disclosed in *Moran et al.* Col. 8 lines 18-45 which discloses that different media types can be used with the programmable playback systems, such as systems as disclosed in *Nichols*. Further, it would have been obvious to an artisan of ordinary skill to have added the ability to *playback* a specific event in order to aid in the repair and/or analysis of a complex control system as disclosed in *Nichols*. The ability to *repeat* the conditions of the system in order to determine the state of the system, at the time of an event, such a failure would motivate an artisan of ordinary skill to use the methods of *Moran et al.* in order to better understand the functionality of the system in *Nichols*.

Therefore, it would have been obvious to combine *Moran et al.* with *Nichols* in order to obtain the invention in claims 1, 5, 6 and 7.

3.2 As regards the limitation in independent claim 5 of having as a part of the apparatus a *waiting time setting section* see *Moran et al.* Figure 3 and Figure 5 item 509 which clearly teaches that a specific event is set to begin at a specific time or time stamp, see also Figure 6 item 607 and the section of *Moran et al.* which teaches waiting for the user input, see Figure 3 item 307 "Adjust Playback" as well as Figures 15-20 and the descriptive text.

3.3 As regards the limitation in claim 6 of having a playback number setting section, *Moran et al.* the examiner has interpreted this limitation to mean that the playback apparatus has a mechanism to set a save point, see *Moran et al.* Item 101 "Capture Session Start-up Module" in Figure 1, which would be used to start up a session at a "save point" as regards the teaching of a "save point" this is being interpreted to be an event point, which *Moran et al.* teaches, see above.

3.4 As dependent claim 7, *Moran et al.* teaches, *an event data editing section* Col. 14 lines 49-60 see also Figure 3 item 308.

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4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,535,620 to Nichols in view of U.S. Patent 5,717,869 to Moran et al. and in further view of U.S. Patent 6,625,789 to Ara et al.

4.1 Regarding claim 8, *Nichols* teaches, a simulation apparatus comprising (Figures 1 & 2 and the descriptive text): an output data setting section to set data which is continuously output to control (Col. 2 lines 32-50 and Col. 2 lines 57-67 "...user defined inputs to the engine management system jointly control the engine" and Col. 4 lines 45-67 and Col. 5 lines 1-10 and Col. 5 lines 18-38 "This flag is generated based on user supplied input as to the cycle pattern for the test..." data is being set based on the user input and this is output data because the data being set creates a simulated *exhaust* or output condition, see Col. 5 line 6 "...simulated exhaust gas signals..."),

which is output to a control target during execution of simulation (Col. 5 lines 25-27 "...the engine control module or engine management system controls the injectors..." see also Col. 6 lines 9-37); a data output section for supplying the control target with output data created on the basis of the data set through the output data setting section (Col. 6 lines 23-65 the ignition control signals based on the simulated input are controlling the engine and the simulated exhaust gases are an output that is the basis for the result of the simulation).

However *Nichols* does not expressly disclose, a storage section; an event data storage section and an event playback section and a signal waveform editing section and that the data is *continuously* output to a control target.

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Official Notice is taken that when monitoring data from a *control target during execution of a simulation* that *continuously* outputting data to a control target is well known in the *vehicle* art, see U.S. Patent 6,405,112 to *Rayner* clearly teaches that a *target* is continuously monitored, see Figure 4 items 100 & 125 & 148 and Col. 5 lines 34-46, “*continuous loop*” and Col. 1 lines 15-30, “that continuously monitors”.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to record continuous data.

The motivation for doing so would be to have a complete record of all of the events that took place while the simulation was running, see *Rayner* Col. 2 lines 66-67 and Col. 3 lines 1-7.

Moran et al. teaches, a storage section an event data storage section, which further includes a method of setting event data, and an event playback section, see the rejection above.

Ara et al. teaches a waveform editor, see Figures 15 & 16 and the descriptive text more specifically, Col. 16 lines 53-67 more specifically, “... a waveform editor program whereas a user has a web browser connected to the server by a network. The user activates the waveform editor program on the web browser and enters the desired series of signals to the server through the editor...”

Nichols, Ara et al. and *Moran et al.* are analogous art because they all come from the same problem solving area of simulation.

At the time of the invention, it would have been obvious to a person of ordinary skill to used the playback apparatus of *Moran et al.* with the data setting apparatus of *Nichols* and with the waveform editing teachings of *Ara et al.*

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The suggestion for doing so would have been to provide an interactive tool for editing interactive event recording sessions, see *Moran et al.* Figures 1-13 and the descriptive text regarding these figures. As regards the motivation to modify *Nichols* with the waveform editor teachings of *Ara et al.*, an artisan of ordinary skill would have been motivated to provide a simple to use method of generating stimulus signals to the control target of the simulation in order to provide a method of “bit banging” specific data pins on the target hardware to determine if the programmed functionality was erroneous or not.

Further and in regards to the requirement for a teaching, suggestion and/or motivation please see *Dann v. Johnson*, 425 U.S. 219, 189 USPQ 257 (1976) and *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, --F.3d--, 82 USPQ2d 1687 (Fed. Cir. 2007) as well as *KSR International Co. v. Teleflex Inc.*, 550 U.S. --, 82 USPQ2d 1385 (2007). The cited cases recently decided by the Federal Circuit Court as well as the U.S. Supreme Court clearly set forth that the references themselves do not have to expressly disclose a teaching, suggestion or motivation to combine references in an obviousness type of art rejection.

Therefore, it would have been obvious to combine *Moran et al.* and *Ara et al.* with *Nichols* in order to obtain the invention in claim 8.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Nichols* in view of *Moran et al.* as applied to claim 7 above and in further view of U.S. Patent 5,794,005 to Steinman.

5.1 *Nichols* as modified by *Moran et al.* teaches a simulation system with simulation event editing and playback ability as applied to claim 7 above in that their combined teaching lacks,

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(claim 10) the event editing section includes a text editing section.

Steinman teaches a text editor used to modify a simulation object that can be used for playback see (Col. 8 lines 5-14).

Nichols as modified by *Moran et al.* and *Steinman* are analogous art because they are both related to simulation.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made, to utilize a text editor in a simulator with playback ability so that portions of the simulation can be annotated for future review an “what if” analysis. Such a suggestion can be found in *Steinman* Col. 8 Lines 12-14.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to DWIN M. CRAIG whose telephone number is (571)272-3710.

The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dwin M Craig/
Examiner, Art Unit 2123

/Paul L Rodriguez/
Supervisory Patent Examiner,
Art Unit 2123